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graph TD
    S1[SELECT ORIGINAL UNIVERSE OF INSTRUMENTS] --> S2[ASSIGN COVARIANCE MATRIX TO THE UNIVERSE]
    S2 --> S3[CALCULATE DV01 OF ORIGINAL UNIVERSE]
    S3 --> S4[SAMPLE AN INSTRUMENT BY REMOVING FROM UNIVERSE]
    S4 --> S5[CACULATE RESIDUAL VARIANCE OF UNIVERSE]
    S5 --> S6[REINSTATE THE REMOVED INSTRUMENT INTO UNIVERSE]
    S6 --> S7{HAVE ALL INSTRUMENTS BEEN SAMPLED?}
    S7 -- YES --> S8[INSERT INTO INDEX INSTRUMENT FOR WHICH RESIDUAL VARIANCE MINIMIZED]
    S7 -- NO --> S9{HAS STOPPING CRITERIA BEEN MET?}
    S8 --> S9
    S9 -- YES --> S12[INDEX FORMED]
    S9 -- NO --> S10[REDUCE THE UNIVERSE BY ELIMINATING THE INSTRUMENT THAT IS INSERTED INTO THE INDEX FROM THE CURRENT INDEX]
    S10 --> S11[UPDATE THE COVARIANCE MATRIX TO THE UNIVERSE USING RESIDUAL VARIANCE]
    S11 --> S4

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FIG. 1

STEP 12